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CLAIMS:

1. An apparatus for determining a property of a fluid which flows through a biological tubular structure, the apparatus operable for:
 - performing an optical detection step for determining a position of the biological tubular structure,
 - 5 - performing an optical spectroscopic step for determining of the property of the fluid in a detection volume, the location of the detection volume being determined by the position, whereby a first numerical aperture is used for performing the optical detection step and a second numerical aperture is used for performing the optical spectroscopic step, and whereby the first numerical aperture is smaller than the second numerical aperture.
- 10 2. The apparatus of claim 1, whereby an objective having a variable numerical aperture is used for performing the optical detection step and for performing the optical spectroscopic step.
- 15 3. The apparatus of claim 1 or 2, whereby the optical detection step is performed by means of an imaging method.
4. The apparatus of claims 1, 2 or 3, whereby Raman spectroscopy is used for performing the optical spectroscopic step.
- 20 5. The apparatus of claim 1, 2 or 3, whereby fluorescence spectroscopy is used for performing the optical spectroscopic step.
6. The apparatus of claim 1, 2 or 3, whereby elastic scattering spectroscopy is
- 25 used for performing the optical spectroscopic step.
7. The apparatus of claim 1, 2, or 3, whereby infrared spectroscopy is used for performing the optical spectroscopic step.

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8. The apparatus of claim 1, 2 or 3, whereby photo-acoustic spectroscopy is used for performing the optical spectroscopic step.
9. The apparatus of any one of the preceding claims 1 to 8, whereby the first
5 numerical aperture is below 0.3, in particular below 0.2, preferably 0.1.
10. The apparatus of any one of the preceding claims 1 to 9, whereby the second numerical aperture is above 0.6, in particular above 0.7, preferably between 0.7 and 0.9.
- 10 11. The apparatus of any one of the preceding claims 1 to 10, further comprising tracking a movement of the biological tubular structure by imaging of the biological tubular structure with the second numerical aperture.
12. The apparatus of any one of the preceding claims 1 to 11, further comprising
15 optically determining a depth of the biological tubular structure under a surface of the body using the second numerical aperture.
13. The apparatus of claim 12, further comprising performing a number of imaging steps with the second numerical aperture for scanning along a direction being
20 transversal to the surface of the body in order to determine the depth.
14. The apparatus of any one of the preceding claims 1 to 13, whereby the fluid is blood and the biological tubular structure is a blood vessel.
- 25 15. The apparatus of anyone of the preceding claims 1 to 14, whereby the first numerical aperture is used for determining two dimensions of the position and the second numerical aperture is used for determining the third dimension of the position.
16. A computer program product, in particular a digital storage medium, for
30 controlling of optical detection means and optical spectroscopic means by the steps of:
- controlling of the optical detection means for determining a position of a biological tubular structure through which a fluid flows,
 - controlling of the optical spectroscopic means to determine a property of the fluid in a detection volume, a location of the detection volume being determined by the position,

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whereby the optical detection means is controlled to perform the position determination with a first numerical aperture and the optical spectroscopic means is controlled to perform the spectroscopic determination of the property using a second numerical aperture, whereby the first numerical aperture is smaller than the second numerical aperture.

17. An apparatus for determining a property of a fluid which flows through a biological tubular structure, the apparatus comprising:

- optical detection means (104, 108) for determining a position of the biological tubular structure,
- optical spectroscopic means (102, 108) for determining a property of the fluid in a detection volume (110), the location of the detection volume being determined by the optical detection system,
- optical means (108, 116) for providing a first numerical aperture for the determination of the position by means of the optical detection means and for providing a second numerical aperture for the spectroscopic determination of the property by means of the optical spectroscopic means, the first numerical aperture being smaller than the second numerical aperture.

18. A method of determining a property of a fluid which flows through a biological tubular structure, the method comprising:

- performing an optical detection step for determining a position of the biological tubular structure,
- performing an optical spectroscopic step for determining of the property of the fluid in a detection volume, the location of the detection volume being determined by the position,

whereby a first numerical aperture is used for performing the optical detection step and a second numerical aperture is used for performing the optical spectroscopic step, and whereby the first numerical aperture is smaller than the second numerical aperture.